

# Employing Intelligence, Surveillance, and Reconnaissance

Organizing, Training, and Equipping to Get It Right

Capt Adam B. Young, USAF

*We stand at the cusp of a new era in military operations in which the speed of information, advancements in technology, networking of our organizations and mind-set of our people will directly shape the success or failure of our future military activities. The foundations of our achievement will hinge on the ability to sense, know, decide, and act ahead of our adversaries on a global scale. These technologies and challenges have trumped the buffer of geography that historically afforded us the luxury of time to think and act, demanding that we alter our ISR farmer-culture mind-set and begin to act more like hunters.*

—Lt Gen David A. Deptula, USAF, Retired

Col Mike Francisco, USAF, Retired



**E**ffective employment of intelligence, surveillance, and reconnaissance (ISR) in today's complex and time-dominated operating environments is more critical than ever before. Though no

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easy task, the orchestrated use of ISR sensors and capabilities “can provide policymakers with information on military capabilities of foreign countries, the location of key defense and industrial sites, indications of the presence of weapons of mass destruction, and information on the plans of foreign leaders and terrorist groups.”<sup>1</sup> Tactical fighting units also rely on ISR for timely information concerning enemy locations and actions that allows them to maneuver adequately and accomplish their missions. This is especially true in the hunt for high-value individuals, which is extremely dynamic in nature and heavily dependent upon ISR.<sup>2</sup> It is not surprising, then, that tactical-, operational-, and strategic-level commanders would rarely execute a military operation in the absence of ISR minimum-force requirements. In fact, ISR has become so critical to our nation’s combat operations that without it, the probability of success greatly diminishes. Therefore, the Department of Defense (DOD) must move forward smartly, quickly, and jointly—not only in acquiring ISR systems but also in defining *how* they will be employed and who is qualified to conduct the ISR orchestra.<sup>3</sup> In this regard, the DOD finds itself behind the power curve because joint and service-specific guidance or employment standards simply do not exist at a level necessary for such an important mission.

Although ISR is typically the first request of combatant commanders “prior to and upon the initiation of military operations,” we lack the procedures to guide tactical-level employment, as mentioned above.<sup>4</sup> Guidance such as this is vital for mission success and should provide procedures and techniques for the effective and purposeful integration of ISR assets at the tactical level, where ISR can make its most valuable contributions. This article goes beyond the scope of an asset’s employment manual, addressing instead how the entire ISR enterprise should be integrated as a symphony rather than as a single instrument. In all fairness, joint doctrine has attempted to address ISR operations in Joint Publication (JP) 2-01, *Joint and National Intelligence Support to Military Operations*.<sup>5</sup> Although that document does an admirable job of capturing general collection-management operations and principles of ISR operational-level command and control (C2), it offers little of use

to the tactical fight. Herein lies the problem. In contrast to ISR, the close air support (CAS) mission set does not suffer from the same deficiency. In fact, an entire publication—JP 3-09.3, *Close Air Support*—is dedicated to the employment and execution of CAS at the operational *and* tactical levels. Furthermore, JP 3.09.3 includes employment guidance for uniquely skilled service members dedicated to CAS control—something not found in the control of ISR.<sup>6</sup>

Because mission demands remain in both current overseas contingency operations and in preparation for any future conflict, uniquely trained intelligence forces must expertly leverage the entire ISR enterprise if we wish to retain the operational advantage. Further, commanders should have full confidence in their assigned ISR force, and training should no longer occur *during* combat operations, as has been the case over the last decade. Toward that end, this article advocates that specific training (prior to arrival in-theater) and qualifications be immediately instituted for personnel involved in controlling ISR assets and their sensors. Specifically, it argues for the joint development of ISR tactical controllers (ITC) and seeks to convince senior military leaders to establish and impose a joint qualification for the real-time, tactical control of ISR assets. The article also recommends adoption of a CAS-like framework for joint and service-specific doctrine, training, and, ultimately, the execution of ISR tactical control. This will occur primarily at the tactical level of warfare although the effects at this level will directly affect operational and strategic objectives. In this regard, the article further recommends that ISR C2 evolve to facilitate effective employment across all spectra and that an adequate ISR-specific C2 structure be established. Lastly, it addresses artificial seams between operations and intelligence forces and continues the transition of ISR forces from farmers to hunters.<sup>7</sup>

## Current ISR Doctrine/Guidance/Employment/Evolution

*Through technological advances and Airmen's ingenuity, we can now surveil or strike any target anywhere on the face of the earth, day or night, in any weather. A more challenging issue today—and for the future—is determining and locating the desired effect we want to achieve. Because ISR capabilities are at the core of determining these desired effects, ISR has never been more important during our 60 years as an independent service. ISR has become the foundation of Global Vigilance, Reach, and Power.*

—Gen T. Michael Moseley, USAF, Retired

Recent conflicts have forced the United States to deal with targets that emerge and expose themselves only for short periods of time.<sup>8</sup> The nature of this target set demands the existence of an effective and efficient ISR system to ensure that the right sensors are at the right place, at the right time.<sup>9</sup> Defining *effective and efficient ISR system*, however, remains a work in progress since the scope of the ISR enterprise is exponentially larger and tremendously more complex than launching a balloon to conduct reconnaissance of enemy troop positions. Today's ISR enterprise includes technologically complex vehicles and sensors that demand trained experts to employ them. Thus, effectiveness in analyzing and controlling the unique, complex, and substantial volume of ISR data and assets demands the integration of a competent and skilled ISR controller throughout the entire process. This is especially true for real-time ISR control because mission demands are extremely dynamic and time sensitive. Toward that end, the DOD must continue to evolve and ensure that training programs, doctrine, employment guidance, and personnel are postured to meet this problem set.

Recent analysis of the conflicts in Afghanistan and Iraq by the RAND Corporation reveals that "commanders are often unaware of how their ISR assets are being employed and that they are perhaps not being used to their full potential."<sup>10</sup> This observation alone raises the question of what the DOD is doing about this problem. To date and over the last decade with increasing frequency, ISR training blocks and semi-

nars have sprouted, primarily in intelligence channels; however, joint doctrine, guidance, and procedures for ISR employment have yet to materialize into usable, tactical-level guidance. Again, as previously stated, JP 2-01 is a step in the right direction, but it falls short in terms of offering ISR guidance for use at the tactical level. Moreover, with regard to the services—specifically, the Air Force as the largest provider of theater airborne ISR—ISR tactical employment guidance is only loosely defined.<sup>11</sup> Although Air Force Doctrine Document (AFDD) 2-0, *Global Integrated Intelligence, Surveillance, and Reconnaissance Operations*, released in 2012, and the *Theater ISR CONOPS*, released in 2008, are both helpful documents that address the concepts of planning, organizing, and employing ISR, they offer little to the tactical driver of assigned collection assets.<sup>12</sup> In the final analysis, these documents simply do not contain the level of detail found in JP 3-09.3.

### ***JP 2-01, “Joint and National Intelligence Support to Military Operations”***

The most recent release of JP 2-01 does an excellent job of beginning to address the complexity of ISR operations but falls short at guiding tactical execution. Chapter 3, “Intelligence Operations,” the most relevant one for this discussion, provides guidance in planning and direction, collection, processing and exploitation, analysis and production, dissemination (PCPAD) and integration, evaluation and feedback.<sup>13</sup> Its 60 pages or so are too general for incorporation at the tactical level and don’t come close to reaching the level of usable guidance found in JP 3-09.3. In fact, the only paragraph dedicated to execution guidance notes that “the unit” will determine how to execute a “mission type order.”<sup>14</sup> Although the guidance to use such an order may seem wise in theory, the fact remains that the majority of forces requesting and consuming ISR usually know very little beyond full motion video. Even in this discipline, unit knowledge about control and collection optimization remains primitive. This negates the synergy of stacking multiple and unique ISR assets together to carry out a common mission since the controller lacks the know-how to employ them effectively. Further,

when units attempt to address their intelligence gaps through ISR, assignment of an asset to a unit can generate a great deal of frustration as the ISR asset operators and the supported unit struggle to understand each other's intent or full capability. This common problem could be mitigated through training and mandating the presence of a qualified ISR controller who would conduct the mission type order. This would not only diminish mutual levels of frustration but also ensure utilization of the appropriate ISR sensor to address the appropriate intelligence gap. In the final analysis, though, JP 2-01 simply does not come close to the level of detail necessary for ISR control at the tactical level.

### ***AFDD 2-0, "Global Integrated ISR Operations"***

AFDD 2-0, which addresses planning, organization, and employment, seeks to deliver usable guidance for ISR employment, but it is primarily concerned with the operational and strategic levels (especially the operational-level C2 of ISR through the air and space operations center [AOC]), offering practically no guidance for tactical-level execution. As the C2 arm for the joint force air component commander, the AOC is tasked with both direction and planning for ISR *and* with execution supervision of ISR operations.<sup>15</sup> Under the AOC construct, ISR planning and tasking occur in the ISR division. Although the division performs an important task, its collection managers are typically more concerned with ensuring that an asset has a collection deck along with the appropriate processing, exploitation, and dissemination team than in vetting the ISR target, ensuring that the supported unit will use the asset responsibly, or confirming that there is someone qualified *on the other end* to control the full range of complex collection assets assigned. This differs considerably from the requirements on the CAS side of the house in that all joint terminal attack controllers (JTAC) must be qualified prior to putting in a call for fires. Nonetheless, once an asset receives tasking via the air tasking order, it falls to the combat operations division to oversee its mission execution at the operational level.<sup>16</sup> This occurs by means of the senior intelligence duty officer team that over-

sees the execution of the plan created in the ISR division by responding dynamically through the retasking of ISR assets as the battlefield evolves and seeing that the appropriate processing, exploitation, and dissemination plan is in place.<sup>17</sup> It is important to note that, depending on the number of ISR assets overseen, remaining tactically engaged in collection missions is rarely feasible, especially in theaters that routinely have more than 10 ISR assets operating simultaneously as the workload becomes too great. Thus, unless an individual is specifically tasked to perform a tactical controller role under the senior intelligence duty officer team, the latter should not direct tactically assigned assets since it is fulfilling an operational C2 role in practice and doctrine. In sum, AFDD 2-0 contains excellent information on coordination of ISR from the combatant commander to the operational level, as well as on ISR units and exploitation centers, but it includes no guidance on how ISR control will or should occur at the tactical level.

### ***"Theater ISR CONOPS" and the ISR Liaison Officer***

The *Theater ISR CONOPS* document "provide[s] a foundation for a theater ISR concept of operations" and improves "integration of ISR into joint operations enabling rapid decisions based on actionable intelligence."<sup>18</sup> It also highlights the requirement of synchronizing all actions and efforts with the commander's operational objectives while ensuring continuous planning and assessment throughout. Lastly—and arguably most importantly—by addressing and supplying guidance to the ISR liaison officer (ISRLO), the document gives form to a concept that came into practice just years earlier.

The idea of embedding a liaison officer as a tactically smart subject-matter expert within an organization to augment or improve tactical employment is not new. In fact, from an airpower perspective, air liaison officer (ALO)-type positions have been utilized as far back as World War II with the goal of properly integrating airpower with Army maneuver.<sup>19</sup> It should come as no surprise, then, that over the last decade, as ISR began a dramatic increase in importance from lower-

echelon tactical units up to senior leaders, a similar type of development would occur.<sup>20</sup> Thus, in 2006 when the Air Force—"the largest military provider of surveillance and reconnaissance"—took the initiative to embed ISR professionals into select Army division-level units as ISRLOs, a truly beneficial evolution began.<sup>21</sup>

ISRLOs are charged with solving the twofold problem of ground forces not effectively utilizing Air Force ISR assets and Air Force ISR operating squadrons not effectively pushing information to ground forces due to limited understanding of ground maneuver.<sup>22</sup> For example, if a ground unit not well versed in the collection, optimization, and control of full motion video is allocated this type of asset to support a particular operation, then it will likely misuse or underuse the asset. In this regard, the ISRLO would be responsible for assisting in the training of the ground unit (during combat operations) to use ISR efficiently and effectively. ISRLOs, however, are typically assigned to division-sized units and therefore cannot be present at all subordinate-unit locations with enough frequency to ensure adequate training of the entire division's intelligence teams. Further, despite their tasking to facilitate support to end users during all phases of collection, they operate under the direction to "not act as terminal controllers."<sup>23</sup> Who, then, is on the pointed end of the spear? Or who is actually conducting ISR terminal control? In truth, the answer to this becomes, "It depends," concluding that there is, in fact, no standard position. This is where the program falls short and differs greatly from the ALO program in CAS wherein ALOs hold a specific qualification to control terminal fires (as the subject-matter experts assigned). Thus, even though ISRLOs assist their assigned Army division units in requesting ISR and see that they follow proper request channels, select the correct sensors, provide training, and so forth, they are not—and should not be (according to written guidance)—involved in tactical-level execution.

### **ISR Tactical Controllers**

If the ISRLO and AOC are not postured to tactically control ISR assets and if no mandatory, joint solution yet exists, has anyone figured out how ISR tactical control is best executed? On the conventional and coalition side, the answer again is, "It depends," or a de facto "No." Alternatively, the special operations community quickly realized the need for a trained ISR controller, leading to the emergence in the last decade of the ISR tactical controller. Likely due to its special operations context, the ITC has yet to make its way into mainstream joint documents. From a service perspective, one finds references to the ITC only in unique tactics documents and only in one service-specific instruction—Air Force Instruction 10-410, *Operations Planning: Presentation of Air Force Special Operations Forces*. However, that document offers nothing more than a loose explanation of the ITC: "The 11 IS [11th Intelligence Squadron, an Air Force Special Operations Command unit] also trains and deploys enlisted or officer ISR Tactical Coordinators [equivalent to the ITC] . . . that embed at the lowest tactical level to plan, task, control, and execute ISR operations."<sup>24</sup> Beyond this Air Force instruction, guidance at the joint level is sparse, and although tactical, service-level documents make reference to the ITC, nothing exists at a level similar to CAS.

Despite the lack of joint guidance, the special operations community has proven the ITC's effectiveness in combat operations, and regular rotations continue to be filled. The program as it was created exists mainly in special operations channels, and its demonstrated effectiveness suggests it should be adopted in principle and applied in the conventional joint and/or coalition environments. Under the special operations forces construct, the ITC is known as the "individual responsible for acting as the conduit between the supported unit commander and his supporting ISR assets."<sup>25</sup> In other words, the ITC *drives* or controls assets in real time as the ISR subject-matter expert to find, fix, and track targets on behalf of his or her assigned commander. The ITC also typically resides in the tactical operations center, working in

direct concert with the supported task force or unit. This placement is of fundamental importance because the ability to synchronize operations is critical—physical separation of the ITC from the supported unit may hinder the desired effects. Clearly, the special operations community has led the way in quickly adapting to a tactical need. Due to the ITC's success in combat, US Special Operations Command and Air Force Special Operations Command are pushing for the “professionalization” of the ITC force.<sup>26</sup> This is a major step forward for the ITC program in special operations, but the general-purpose force has yet to incorporate this critical function. The question then becomes, how does the *entire* joint force move forward?

## Applying the CAS/JTAC Framework for ISR Control

*Historically, airmen on the ground have provided the “airmanship” necessary to integrate airpower with ground operations.*

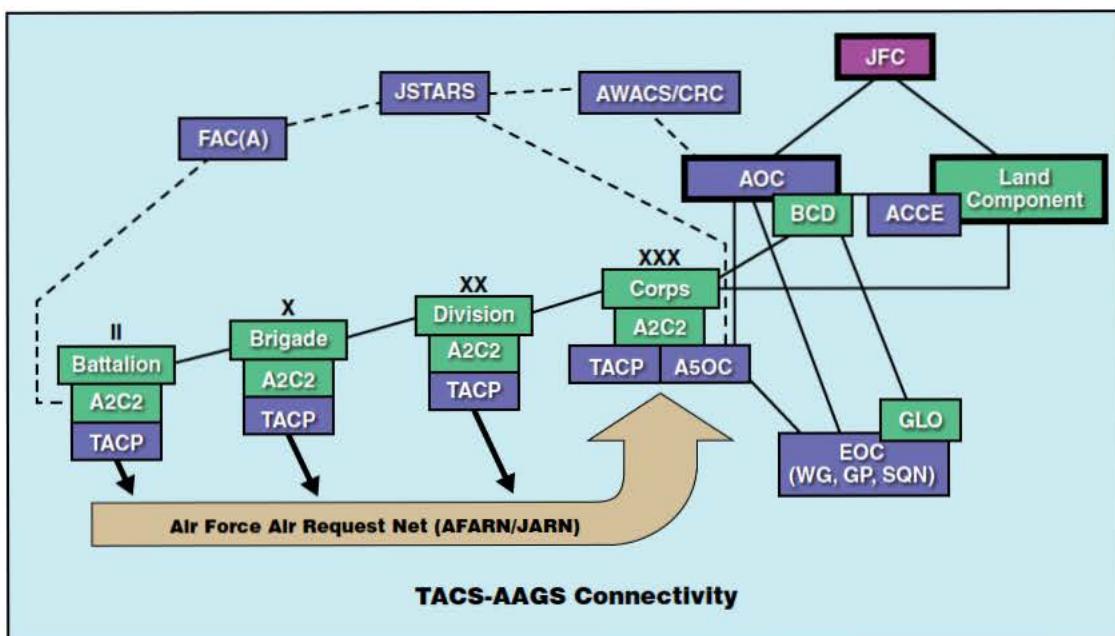
—Maj Robert G. Armfield

Today, the Air Force is tasked with providing ISR to a growing set of missions, from the global fight against terrorist organizations to humanitarian-relief efforts around the globe, while remaining postured to support major combat operations should the need arise.<sup>27</sup> With these responsibilities in mind, the establishment of an ITC program under formal doctrine and guidance, one that conveys the employment art of ISR and an understanding of how to leverage the entire ISR enterprise, is vital to the success of taskings to come. This section builds from the foundation of the current state of ISR and begins to incorporate a CAS/JTAC framework as a way of proposing a baseline for the ITC program. Much of this proposal stems from JP 3-09.3.

It is important to understand that lessons learned from the evolution of CAS can and should be applied directly to ISR. From the beginnings of CAS in World War I to the formation of the air support party (later the tactical air control party), it became clear that integrating a CAS-

trained Airman across multiple levels as part of the application of air-power was critical to success. This, then, is the first lesson learned that should be applied to ISR—*Uniquely skilled and trained ISR personnel must become directly involved in the execution of ISR.* Next, with the creation of the ALO and JTAC positions, the community recognized the importance of qualification standards that are mandatory and not simply nice to have. This is the second lesson learned—*ITCs must be uniquely qualified to employ their skill set.* In turn, these two lessons should form the baseline for future ITC programs; however, if ISR is to truly benefit from the wisdom that CAS can provide, then we must also analyze the C2 structure.

In the 1980s, the Air Force renewed its effort “to provide the Army with the best possible service” by utilizing the theater air control system (fig. 1).<sup>28</sup> This system aligned tactical air control parties down to the battalion level and gave higher headquarters guidance from the air support operations center (ASOC). Ultimately, though, under this system the Air Force embedded experienced Airmen where they were needed and ensured that Army counterparts had qualified personnel to control airborne fires with the maneuver units they supported. This is the third lesson learned that needs to be applied—*ISR controllers must be integrated into an appropriate C2 structure that guarantees the most effective use of ISR.*



A2C2 - Army airspace command and control

AAGS - Army air-ground system

ACCE - air component coordination element

AOC - air and space operations center

ASOC - air support operations center

AWACS/CRC - Airborne Warning and

Control System / control and reporting center

BCD - battlefield coordination detachment

EOC - expeditionary operations center

FAC(A) - forward air controller (airborne)

GLO - ground liaison officer

GP - group

JARN - joint air request net

JFC - joint force commander

JSTARS - Joint Surveillance Target Attack Radar System

SQN - squadron

TACP - tactical air control party

TACS - theater air control system

WG - wing

**Figure 1. Air Force theater air control system.** (Reprinted from AFDD 3-03, *Counterland Operations*, 11 September 2006 [incorporating change 1, 28 July 2011], 52, [http://static.e-publishing.af.mil/production/1/lemay\\_center/publication/afdd3-03/afdd3-03.pdf#ProtectedMode=1](http://static.e-publishing.af.mil/production/1/lemay_center/publication/afdd3-03/afdd3-03.pdf#ProtectedMode=1).)

The last lesson learned for application to ISR comes directly from the many joint and service-specific doctrine documents that deal with CAS. Although ample guidance exists, JP 3-09.3, *Close Air Support*, consisting of 275 pages dedicated to the execution of CAS, remains the most appropriate for this discussion. As a joint doctrine document, it does not stop at the operational level but offers detailed guidance for CAS execution, communications procedures, planning, considerations for munitions employment, aircraft differences, the effects of weather,

and the like. Such detail is a testament to the CAS community and the extent of its evolution over the last 50 years. Nonetheless, this leads to the final lesson learned that we should apply to ISR—*ISR must have appropriate joint and doctrinal guidance to facilitate the conduct of tactical-level execution.*

## Recommendations

*With such capacity for ISR, the difficult guesswork on what hostile forces are around the corner, on the roof, or over the wall is substantially reduced for our ground forces. This capability is absolutely vital at all levels of conflict—strategic, operational, and tactical.*

—Gen Norton A. Schwartz, USAF, Retired

To move forward jointly and smartly in the execution of ISR, the DOD should immediately adopt a CAS/JTAC methodology and framework that focus on the previously described lessons learned. The framework should be accompanied by clearly defined certification and qualification criteria similar to those of the current JTAC model. Further, it should include specific employment guidelines, training requirements, certification guidance, personnel-placement instructions, and C2 directions to shape and field ISR professionals as ISR hunters. Toward that end, the Air Force, as the service lead and executive agent for the joint ISR community, should begin drafting a joint publication to guide ISR employment at a level similar to that found in JP 3-09.3. Further, incorporating a tactical publication for joint ISR employment from the Air Land Sea Application Center would add greatly to this effort. Such a joint document, one that comprehensively defines ISR tactical employment, will equip ISR hunters with the means to leverage the global ISR enterprise, increase the effective use of ISR sensors, ensure mission success, and protect friendly forces, among other key objectives. This guidance should also clearly define the ITC as the lowest echelon controller and mandate the strict enforcement of qualification minimums and guidelines; again, only qualified and trained profes-

sionals should perform ISR tactical control. By doing so, commanders will never question whether or not an individual has the appropriate training and qualifications prior to controlling ISR assets in combat.

### ***ISR Tactical Controller Defined***

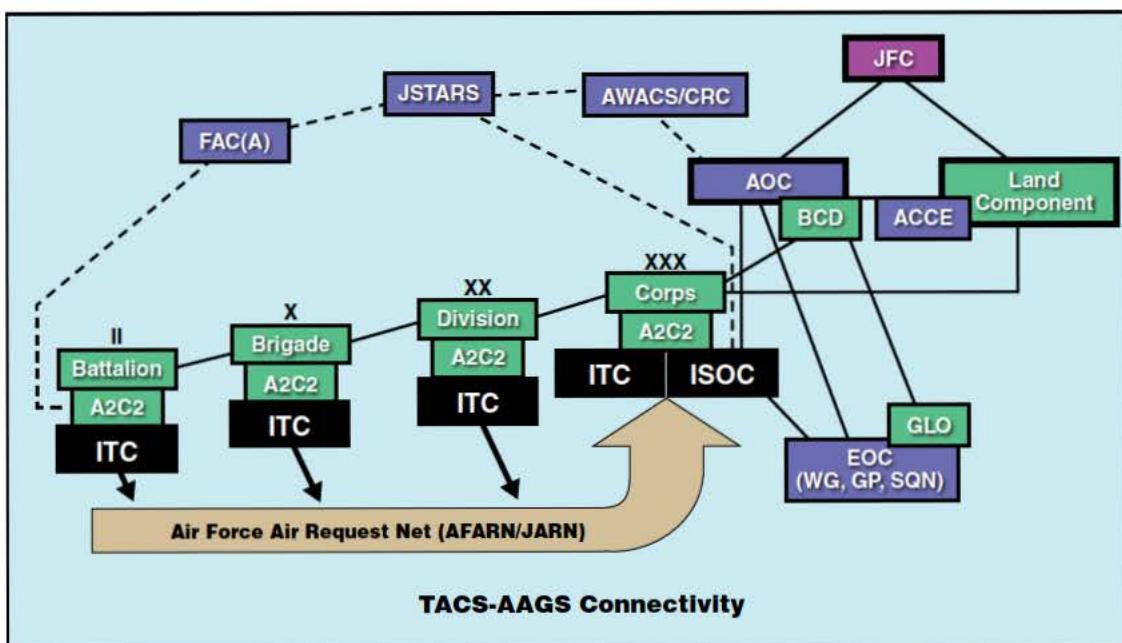
Similar to a JTAC, an ITC should be a qualified service member who, from a forward or reachback location, directs the employment of ISR assets. ITCs should come from officer and enlisted intelligence backgrounds since having a basic knowledge of intelligence will ensure a common footing for training programs and add to an ITC's capability. These individuals should understand the entirety of the "find, fix, track, target, engage, and assess" and PCPAD models but should primarily operate in the "find, fix, track" and "collection" portions.<sup>29</sup> Lastly, the DOD should recognize qualified ITCs as personnel authorized to perform ISR tactical control. They must also be able to perform, execute, and exhibit the following mandatory requirements:

1. Know the enemy situation and location of friendly units.
2. Know the supported commander's target priority, desired effects, and timing of . . . [ISR].
3. Know the commander's intent and applicable ROE [rules of engagement].
4. Validate [and prosecute] targets of opportunity.
5. Advise the commander on proper employment of . . . [ISR] assets.
6. Submit immediate requests for . . . [ISR].
7. Control . . . [ISR] with supported commander's approval.
8. Deconflict . . . [and manage ISR sensors for maximum advantage over the enemy].
9. Provide initial . . . [ISR assessment after operations for follow-on targets and battle damage assessment].<sup>30</sup>

A new joint publication, JP 2-09.3, *ISR Tactical Control*, that integrates these nine core responsibilities for full compliance should be utilized as a baseline for topic guidance and should include areas such as organization and fundamentals, C2, planning and requesting, and preparation and execution.<sup>31</sup>

## *Placing the ISR Tactical Controller and Evolving the Air Support Operations Center*

Based on this proposed doctrine and guidance for the ITC, these positions will be optimally employed at the tactical level of warfare. Although qualified ITCs can also operate at higher levels of warfare, including the operational and strategic, they will provide real-time influence and prove most effective at the tactical level. For ISR employment, this article suggests a structure similar to the theater air control system, which would place ITCs (if predominantly a ground campaign) at each battalion, brigade, division, and corps level, complete with a C2 node similar to the ASOC's and subordinate to the AOC (fig. 2).



ISOC - ISR support operations center  
ITC - ISR tactical controller

**Figure 2. Placement of ISR tactical controllers.** (Adapted from Air Force Doctrine Document 3-03, *Counterland Operations*, 11 September 2006 [incorporating change 1, 28 July 2011], 52, [http://static.e-publishing.af.mil/production/1/lemay\\_center/publication/afdd3-03/afdd3-03.pdf#ProtectedMode=1.](http://static.e-publishing.af.mil/production/1/lemay_center/publication/afdd3-03/afdd3-03.pdf#ProtectedMode=1.))

Placement of ITCs in an ASOC-like structure should permit the AOC to evolve and include a separate ISR support operations center (ISOC). Doctrinally, the ASOC is charged with coordination of preplanned and immediate CAS and normally executes tactical control of joint fires available for tasking. The ISOC would execute a similar mission but concentrate instead on the employment of ISR, doing so in close coordination with the ASOC and other C2 elements.<sup>32</sup> Note that having two separate chains of command is critical and that no attempt should be made to put the ISOC under the current ASOC command structure since such an arrangement would create a conflict of interest that hinders ISR when multiuse assets are operating on the battlefield. Thus, establishment of an ISOC with a command structure similar to the ASOC's would allow both C2 arms to report directly to the AOC, which could arbitrate between competing demands and ensure that the commander's objectives are met. Lastly, an ISOC would facilitate a direct tie into ground (or maritime) units while maintaining flexibility and responsiveness to the C2 of ISR in carrying out any mission.<sup>33</sup>

## Conclusion

Over the last decade, the conduct of warfare has changed dramatically with the infusion of real-time ISR. Although the concepts of ISR as we know it have been in place for centuries, the speed at which information is processed *and* required on the battlefield today, along with the vast quantity of ISR available, resembles nothing in the past. Commanders from all services have become reliant on ISR professionals to find, fix, and track targets; indeed, without reliable ISR, many commanders will not execute operations. In the absence of modern ISR capabilities, we could not have conducted countless successful operations or removed many high-value individuals from the battlefield. Further, our forces would have faced much greater risks. In light of these developments, the DOD has done an excellent job of acquiring ISR systems and fielding them on the battlefield. However, it has not enjoyed the same level of success in establishing guidance, training,



and standards for ISR employment at the tactical level. Despite the many key developments in ISR employment (ISRLOs, ITCs employed as part of special operations teams, operational authorities, etc.), we still lack legitimate joint guidance. One can only speculate about how many lives would have been saved and enemies removed had such guidance existed. We must remedy this deficiency, capture lessons learned, and employ ISR on an equal footing with CAS. Any future conflict will demand this evolution. Employing uniquely trained *and* qualified ISR tactical controllers must become the standard, not the exception. Our success in the full range of military operations will depend upon these skilled ISR hunters who give our enemies no quarter as they find, fix, and track them day or night, at any place and at any time. ◊

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## Notes

1. Marshall Curtis Erwin, *Intelligence, Surveillance, and Reconnaissance (ISR) Acquisition: Issues for Congress*, CRS Report for Congress R41284 (Washington, DC: Congressional Research Service, 16 April 2013), 1, <http://www.fas.org/sgp/crs/intel/R41284.pdf>.
2. Maj James Bilby (US Air Force), in discussion with the author, 9 April 2013.
3. This article goes beyond the pilots, exploiters, and sensor operators, examining the tactical-level controllers tasked to orchestrate a multitude of unique ISR assets assigned to collect against a particular target or support a specific mission.
4. Air Force Doctrine Document (AFDD) 2-0, *Global Integrated Intelligence, Surveillance, and Reconnaissance Operations*, 6 January 2012 (hereafter AFDD 2-0, *Global Integrated ISR Operations*), [ii], [http://static.e-publishing.af.mil/production/1/af\\_cv/publication/afdd2-0/afdd2-0.pdf](http://static.e-publishing.af.mil/production/1/af_cv/publication/afdd2-0/afdd2-0.pdf).
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33. I am grateful to Capt Jerry Gay, whose advice was pivotal in helping me work through the conclusions for this proposed C2 structure.



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